

**Remarks**

**I. Status of the claims**

Claims 1, 8, 15, 29, 31, 53, 55-59, 61-66 and 96-99 and 101-104 are pending in this application. The amendments remove non-elected subject matter from the claims and more clearly recite the invention.

The undersigned expresses appreciation to the Examiner for discussing this application in a personal interview on April 16, 2003. The topics covered in the interview included the restriction requirement, the art rejections and the indefiniteness rejections made in the Office Action of January 21, 2003. This reply discusses the issues raised in the interview, the amendments to the claims, and the responses to the pending rejections.

**II. Restriction requirement**

Page 3 of the most recent Office Action outlines the scope of the restriction requirement. During the personal interview, the undersigned sought clarification of the meaning of Ar I as "heterocycle optionally substituted and is a bicyclic (6 member-6 member) ring." The Examiner indicated that the meaning was intended to cover the heteroaryl group of the elected compound (an optionally substituted oxazoyl group) as well as an optionally substituted quinolinyl group. Applicants have amended the claims to recite Ar I as oxazoyl or quinolinyl, which are optionally substituted by one or more ring system substituents.

The undersigned also discussed the restriction required for both variables a and b as equal to 1. The elected includes variables a and b as equal to 1, but applicants were not originally requested to select limited values of those variables in the original restriction requirement. The undersigned asked that the Examiner at least consider subject matter where a= 1 and b= 0 or 1. Claim 1 has thus been amended in the definitions of variables a and b from a= 0-6 to a= 1 and from b= 0-4 to b= 0 or 1. During the interview, the Examiner asked that applicants identify example compounds disclosed and claimed in the application where a= 1 and b= 0. In response, applicants

identify the first, fourth and fifth compounds recited in claim 102 as containing a= 1 and b= 0.

### **III. Rejections under 35 U.S.C. § 102**

The Examiner rejected claims 1, 2, 8, 15, 29-31, 53, 91 92 and 102 under 35 U.S.C. § 102(b) as anticipated by Kahovcova et al. Applicants respectfully traverse this rejection. The Kahovcova compound contains a dimethyloxiranyl ring in the portion of the compound that corresponds in position to the Ar I ring of the claimed invention. The Ar I ring of the claimed invention is an optionally substituted oxazolyl or quinolinyl group. The compounds of Kahovcova containing the dimethyloxiranyl ring thus do not teach, and do not suggest, the claimed compounds. Applicants therefore respectfully request that the Examiner withdraw this rejection.

The Examiner also rejected claims 1, 2, 8, 15, 29-31, 53, 91, 92 and 102 under 35 U.S.C. § 102(b) as anticipated by Kozikowski et al. The Kozikowski compound contains an indole ring in the portion of the compound that corresponds in position to the Ar I ring of the claimed invention. The Ar I ring of the claimed invention is an optionally substituted oxazolyl or quinolinyl group. The compounds of Kozikowski containing the indole ring thus do not teach, and do not suggest, the claimed compounds. Applicants therefore respectfully request that the Examiner withdraw this rejection.

### **IV. Rejections under 35 U.S.C. § 112**

The Examiner rejected claims 1, 2 and 30 under 35 U.S.C. § 112, second paragraph, as indefinite in the use of the term "heteroaryl" for ring Ar I. Applicants have amended Ar I to cover optionally substituted oxazolyl and quinolinyl groups, and have removed the term "heteroaryl." Claims 2 and 30 have also been canceled. These amendments should be sufficient to remove this rejection.

The Examiner rejected claim 1 as indefinite in the use of the terms "alkyl," "aryl," "aralkyl," and "substituted aryl." Applicants have amended the claim to define "alkyl"

and "aryl." The term "aralkyl" takes its meanings from the base terms "alkyl" and "aryl" that have been defined. Applicants have also amended the claim to define the alkyl substituents and the ring system substituents.

Support for the definition of "alkyl" in claim 1 appears in the specification at page 8, lines 13-14. Support for the definition of "aryl" appears in the specification at page 9, lines 10-11. Support for the definition of the "alkyl group substituent" appears in the specification at page 8, lines 23-25, and support for the definition of the "ring system substituent" appears in the specification at page 28, lines 16-18.

Lastly, the Examiner expressed concern over whether variable Z in formula I was intended to fall under the category of "ring system substituent" for ring Ar II. Applicants have amended claim 1 to recite that ring Ar II is phenyl, where phenyl is optionally substituted by one or more ring system substituents, in addition to being substituted by group Z. This amendment should address the Examiner's concern.

#### **V. Amendment to claims 102 and 104**

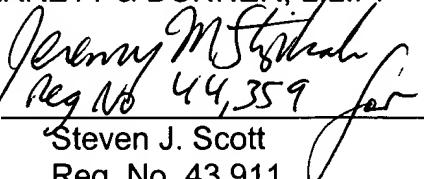
As discussed during the personal interview, applicants have also amended the chemical structure of the compound of claim 104, which is also the second compound identified in claim 102. Support for the corrected chemical structure appears from the chemical name of the compound at page 95, line 13.

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In view of the above, the pending claims should comply with the restriction requirement, should be patentable over the cited documents and should satisfy the requirements of 35 U.S.C. § 112, second paragraph. If there is any fee due in connection with the filing of this Amendment, please charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

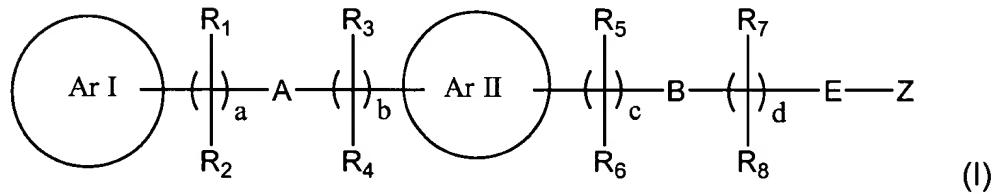
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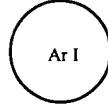
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Appendix Detailing Amendments to Claims

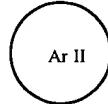
1. (Five Times Amended) A compound of formula (I)



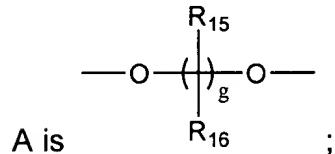
wherein:



is oxazolyl or quinolinyl [heteroaryl], which are [is] optionally substituted by one or more ring system substituents;



is [optionally substituted] phenyl, which is optionally substituted by one or more ring system substituents, in addition to being substituted by group Z;



A is ;

B and E are a chemical bond;

a is 1 [0-6];

b is 0 or 1 [0-4];

c is 0;

d is 0;

g is 1-5;

R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are, independently, hydrogen, halogen or [optionally substituted] alkyl, wherein alkyl is optionally substituted by one or more alkyl group substituents;

Z is  $R_{21}O_2C$ -,  $R_{21}OC$ -, -CN,  $R_{21}O_2SHNCO$ -,  $R_{21}O_2SHN$ -,  $(R_{21})_2NCO$ - or  $R_{21}O$ -; [and]

$R_{21}$  is independently

hydrogen,

[optionally substituted] alkyl, which is optionally substituted by one or more alkyl group substituents,

[optionally substituted] aryl, which is optionally substituted by one or more ring system substituents,

[optionally substituted] cycloalkyl, which is optionally substituted by one or more ring system substituents, or

[optionally substituted] aralkyl, wherein the aryl portion is optionally substituted by one or more ring system substituents and the alkyl portion is optionally substituted by one or more alkyl group substituents;

$R_{15}$ ,  $R_{16}$  are independently

hydrogen,

[optionally substituted] alkyl, which is optionally substituted by one or more alkyl group substituents,

[optionally substituted] aralkyl, wherein the aryl portion is optionally substituted by one or more ring system substituents and the alkyl portion is optionally substituted by one or more alkyl group substituents, or

[carbonyl, or]

[optionally substituted] alkoxy carbonyl, wherein the alkyl portion is optionally substituted by one or more alkyl group substituents;

or a pharmaceutically acceptable salt thereof, an N-oxide thereof, a hydrate thereof or a solvate thereof,

wherein

alkyl is an aliphatic hydrocarbon group which is straight or branched having 1 to about 20 carbon atoms;

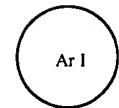
aryl is an aromatic monocyclic or multicyclic ring system of about 6 to about 14 carbon atoms;

a ring system substituent is halo, unsubstituted lower alkyl of 1 to about 4 carbon atoms, unsubstituted alkoxy, unsubstituted aryloxy, unsubstituted aralkyloxy or unsubstituted cycloalkylalkyloxy; and

an alkyl group substituent is unsubstituted acyl, carboxyl, unsubstituted carboxymethyl, unsubstituted methoxycarbonylethyl, unsubstituted benzyloxycarbonylmethyl, unsubstituted pyridylmethyloxycarbonylmethyl or unsubstituted alkoxy carbonyl.

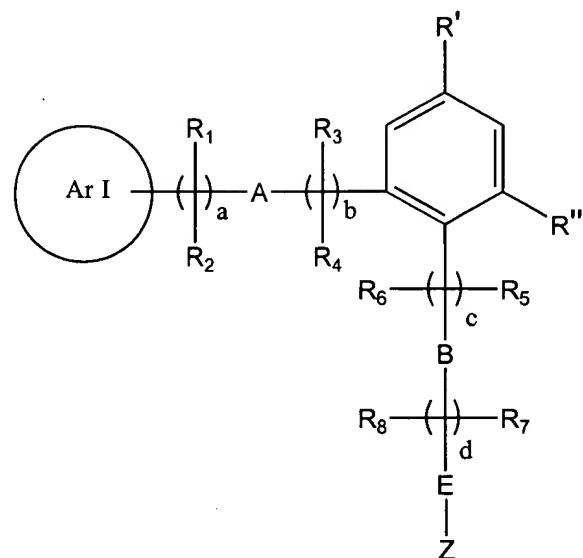
15. (Twice Amended) A compound according to claim 1 wherein Z is  $R_{21}O_2SHNCO-$ , and  $R_{21}$  is phenyl, wherein phenyl is optionally substituted by one or more ring system substituents.

31. (Three Times Amended) A compound according to claim 1 wherein

 is unsubstituted quinolin-2-yl, 3-substituted quinolin-2-yl, 4-substituted quinolin-2-yl, 6-substituted quinolin-2-yl or 7 substituted quinolin-2-yl; or [an unsubstituted quinozalin-2-yl, 3-substituted quinozalin-2-yl, 6-substituted quinozalin-2-yl or 3,6-disubstituted quinozalin-2-yl; unsubstituted quinazolin-2-yl, 4-substituted quinazolin-2-yl or 6-substituted quinazolin-2-yl; unsubstituted isoquinolin-3-yl, 6-substituted isoquinolin-3-yl or 7-substituted isoquinolin-3-yl; 3-substituted-quinazolin-4-on-2-yl; N-substituted quinolin-4-on-2-yl;] 2-substituted-oxazol-4-yl or 2,5 disubstituted-oxazol-4-yl; 4-substituted oxazol-2-yl or 4,5-disubstituted-oxazol-2-yl; [2-substituted thiazol-4-yl or 2,5-disubstituted thiazol-4-yl; 4-substituted thiazol-2-yl or 4,5-disubstituted-thiazol-2-yl; 5-substituted-[1,2,4]oxadiazol-3-yl; 3-substituted-[1,2,4] oxadiazol-5-yl; 5-substituted-

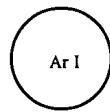
imidazol-2-yl or 3,5-disubstituted-imidazol-2-yl; 2-substituted-imidazol-5-yl or 2,3-disubstituted-imidazol-5-yl; 3-substituted-isoxazol-5-yl; 5-substituted-isoxazol-3-yl; 5-substituted-[1,2,4] thiadiazol-3-yl; 3-substituted-[1,2,4]-thiadiazol-5-yl; 2-substituted-[1,3,4]-thiadiazol-5-yl; 2-substituted-[1,3,4]-oxadiazol-5-yl; 1-substituted-pyrazol-3-yl; 3-substituted-pyrazol-5-yl; 3-substituted-[1,2,4]-triazol-5-yl; 1-substituted-[1,2,4]-triazol-3-yl; 3-substituted pyridin-2-yl, 5-substituted pyridin-2-yl, 6-substituted pyridin-2-yl or 3,5-disubstituted pyridin-2-yl; 3-substituted pyrazin-2-yl, 5-substituted pyrazin-2-yl, 6-substituted pyrazin-2-yl or 3,5 disubstituted-pyrazin-2-yl; 5-substituted pyrimidin-2-yl or 6-substituted-pyrimidin-2-yl; 6-substituted-pyridazin-3-yl or 4,6-disubstituted-pyridazin-3-yl; unsubstituted -benzothiazol-2-yl or 5-substituted-benzothiazol-2-yl; unsubstituted benzoxazol-2yl or 5-substituted-benzoxazol-2yl; unsubstituted -benzimidazol-2-yl or 5-substituted-benzimidazol-2-yl; unsubstituted -thiophen-2yl, 3-substituted -thiophen-2yl, 6-substituted -thiophen-2yl or 3,6-disubstituted-thiophen-2yl; unsubstituted -benzofuran-2-y, 3-substituted-benzofuran-2-yl, 6-substituted-benzofuran-2-yl or 3,6-disubstituted-benzofuran-2-yl; 3-substituted-benzofuran-6-yl or 3,7-disubstituted-benzofuran-6-yl,] wherein an indicated substituent [the substituent] is a ring system substituent.

97. (Three Times Amended) A compound as claimed in claim 1, which is of formula



wherein

[

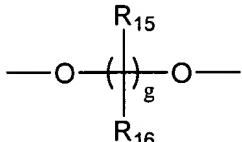


is optionally substituted heteroaryl;]

[a = 1;]

$$b = 0;$$

$R_1, R_2, R_3, R_4$  are hydrogen



[A is  $R_{16}$  ;]

$R_{15}, R_{16}$  are hydrogen;

[c = 0;

$d = 0$ ;

$g = 2, 3, 4$  or  $5$ ;

[B and E are a chemical bond;]

Z is  $R_2O_2C^-$ ,  $R_2OC^-$ , or  $R_2O^-$ ;

[R<sub>21</sub> is hydrogen, optionally substituted alkyl, optionally substituted aryl, optionally substituted cycloalkyl, or optionally substituted aralkyl;]

R' is hydrogen, halo, unsubstituted lower alkyl of 1 to about 4 carbon atoms, unsubstituted alkoxy, unsubstituted aryloxy or unsubstituted aralkyloxy [hydrogen, optionally substituted lower alkyl, halo, optionally substituted alkoxy, optionally substituted aryloxy or optionally substituted aralkyloxy]; and

R" is hydrogen, halo, unsubstituted lower alkyl of 1 to about 4 carbon atoms, unsubstituted alkoxy, unsubstituted aralkyloxy or unsubstituted cycloalkylalkyloxy [optionally substituted lower alkyl, hydrogen, optionally substituted aralkyloxy, optionally substituted alkoxy, optionally substituted cycloalkylalkyloxy or halo], or

a pharmaceutically acceptable salt thereof, an N-oxide thereof, a hydrate thereof or a solvate thereof.

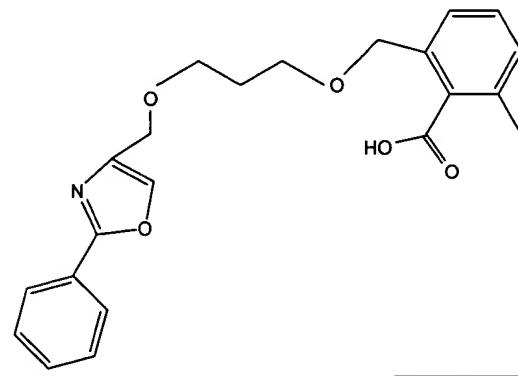
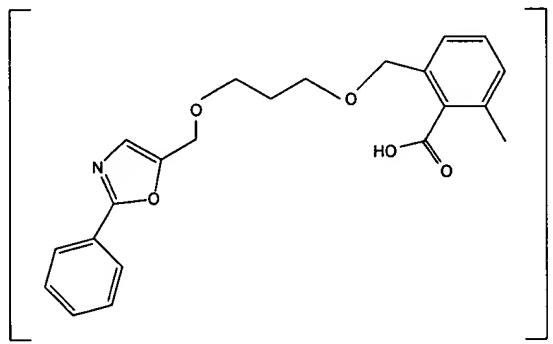
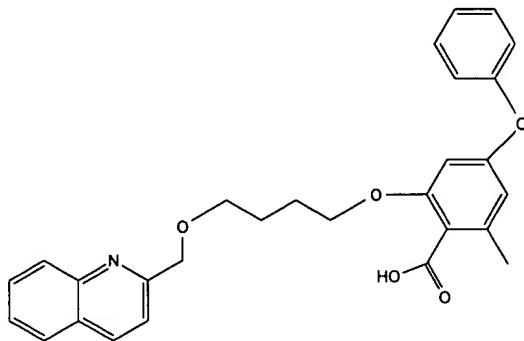
99. (Amended) A compound according to claim 97, wherein R' is hydrogen; and R" is lower alkyl of 1 to about 4 carbon atoms.

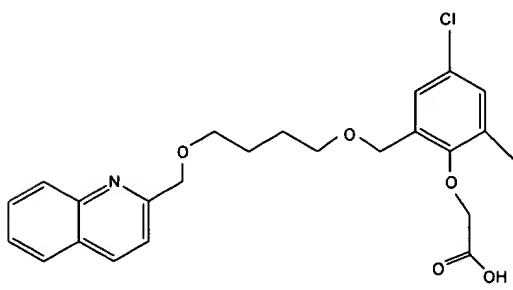
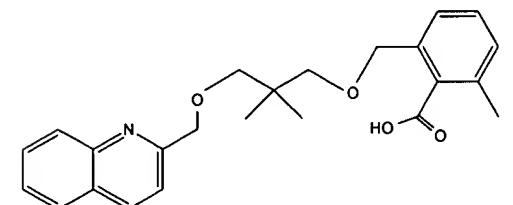
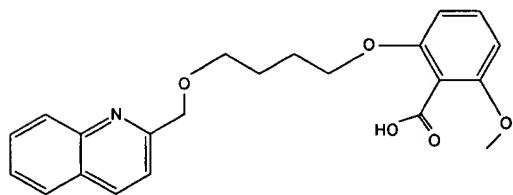
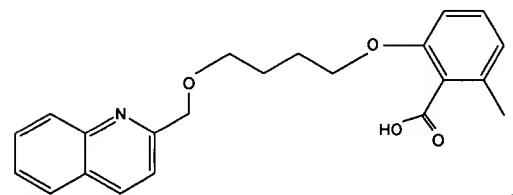
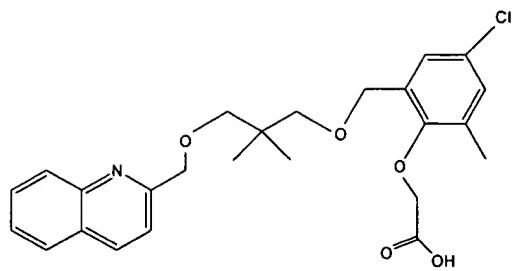
101. (Amended) A compound according to claim 97, wherein

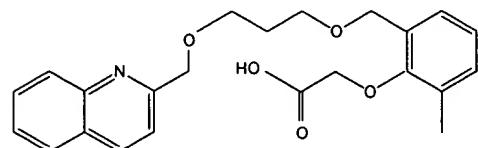
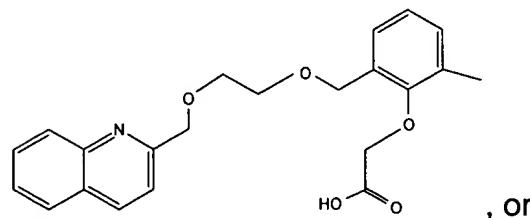
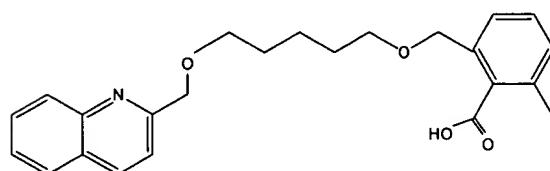
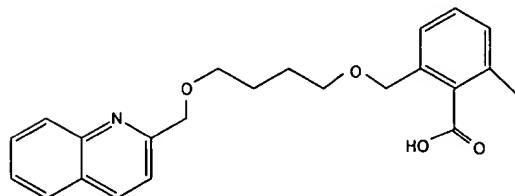
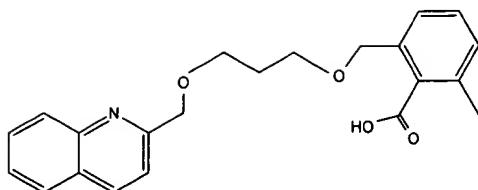
Ar 1

is 2-substituted-oxazol-4-yl, wherein the substituent is a ring system substituent.

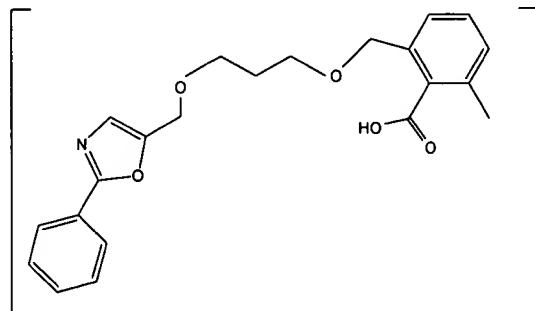
102. (Twice Amended) A compound according to claim 1, wherein the compound is







104. (Amended) A compound according to claim 1, wherein the compound is



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